



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,652	03/25/2004	James Douglas Gilmore	2003-0829.02	7487
21972	7590	02/15/2006	EXAMINER	
LEXMARK INTERNATIONAL, INC. INTELLECTUAL PROPERTY LAW DEPARTMENT 740 WEST NEW CIRCLE ROAD BLDG. 082-1 LEXINGTON, KY 40550-0999			WAGNER, CRYSTAL L	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/809,652

Applicant(s)

GILMORE, JAMES DOUGLAS

Examiner

Crystal L. Wagner

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 8, 10-14, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) 4, 5, 7, 9, 15-18, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 1 is objected to because of the following informalities: It is not understood what is meant by the phrase: “the temperature including a first maximum target temperature” as recited in line 5 of the claim. A temperature cannot include another temperature. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6, 8, 10-12, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslam *et al.* (U.S. Patent No. 6,016,410) in view of McMIndes *et al.* (U.S. Patent No. 6,298,216 B1).

Regarding claims 1 and 19, Aslam *et al.* discloses a method for fusing toner on media in an electrophotographic printing apparatus having a fuser 10 with a heated roll 12 and a backing apparatus 14 between which individual pieces of media pass in a fusing operation performed at a temperature within a temperature range between a maximum temperature and a minimum temperature, the temperature including a first maximum target temperature, said method comprising steps of:

heating the heated roll to a preheated temperature within the temperature range, the preheated temperature being in excess of the first maximum target temperature (as disclosed in col. 4, lines 60-65),

interrupting said heating prior to commencement of a fusing operation (as disclosed in col. 4, line 66 through col. 5, line 8), and

commencing the fusing operation by passing media between the heated roll and the backing structure (as disclosed in col. 5, lines 15-27; see also: Fig. 3).

Aslam *et al.* differs from the claimed invention because it does not disclose that the method further comprises the last step of initiating reheating of the heated roll during the fusing operation only upon a temperature of the heated roll dropping below the first maximum target temperature. McMIndes *et al.* discloses a method for fusing toner on media 12 in an electrophotographic printing apparatus having a fuser 23 with a heated roll 86 and a backing apparatus 87 between which individual pieces of media pass in a fusing operation performed at a temperature within a temperature range between a maximum temperature and a minimum temperature, comprising the steps of:

heating the heated roll to a preheated temperature within the temperature range,

and initiated reheated of the heated roll during the fusing operation only upon a temperature of the heated roll dropping below a predetermined temperature within the temperature range (as disclosed in col. 10, lines 25-34 and col. 11, lines 53-60; see also: Fig. 1).

McMIndes *et al.* is evidence that one of ordinary skill in the art of method for fusing toner on media in electrophotographic printing apparatuses would have recognized that the temperature of the heated roll should be further monitored and controlled in order to maintain a

Art Unit: 2852

steady fusing operation temperature. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Aslam *et al.* to further include the step of initiating reheating of the heated roll during the fusing operation upon a temperature of the heated roll dropping below the first maximum target temperature for the benefits of obtaining a constant fixing quality, as per teachings of McMindes *et al.* (as disclosed in col. 11, lines 50-52).

As to claims 3, 6, and 11, Aslam *et al.* further discloses that the method includes controlling a standby temperature of the heated roll during a standby period between completing a first print job and before commencement of a second print job, said step of controlling the standby temperature including reheating the heated roll to the standby temperature during the standby period, the standby temperature of the heated roll being higher than the first maximum target temperature (as disclosed in col. 4, lines 60-67; see also: Fig. 3).

As to claims 10 and 12, Aslam *et al.* discloses that the preheated temperature is at least about 5°C greater than the first maximum target temperature (as illustrated in Fig. 3).

As to claims 8 and 20, Aslam *et al.* additionally teaches that the preheated temperature and the standby temperature are substantially the same (as illustrated in Fig. 3).

Claims 1-3, 6, 8, 10-12, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslam *et al.* (U.S. Patent No. 6,016,410) in view of and Elter (U.S. Patent No. 4,551,007).

As to claims 1 and 19, Aslam *et al.* discloses the invention as set forth above. Elter discloses a method for fusing toner on media in an electrophotographic printing apparatus having a fuser 48 with a heated roll 50 and a backing apparatus 52 between which individual pieces of

Art Unit: 2852

media pass in a fusing operation performed at a temperature within a temperature range between a maximum temperature and a minimum temperature, said method comprising the steps of:

initiating reheating of the heated roll during the fusing operation only upon a temperature of the heated roll dropping below the first maximum target temperature (as disclosed in col. 1, line 34-64 and col. 8, line 54 through col. 7, line 35).

Elter is evidence that one of ordinary skill in the art of methods for fusing toner on media in electrophotographic printing apparatuses would have recognized that the heated roll should be further monitored and controlled to maintain a stable fusing temperature. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Aslam *et al.* to additionally include the step of reheating the heated roll during the fusing operation only upon a temperature of the heated roll dropping below the first maximum target temperature for the benefits of successfully affixing the toner particles to the copy sheet, as per teachings of Elter.

As to claim 2, Elter discloses a method for fusing toner on media in an electrophotographic printing apparatus having a fuser 48 with a heated roll 50 and a backing apparatus 52 between which individual pieces of media pass in a fusing operation performed at a temperature within a temperature range between a maximum temperature and a minimum temperature, said method comprising the steps of:

counting the individual pieces of media processed in a print job (as disclosed in col. 6, lines 31-37), and

after a predetermined number of pieces of media have been processed, initiated heating of the heated roll only upon a temperature thereof dropping below a second target temperature

Art Unit: 2852

lower than the first maximum target temperature (as disclosed in col. 6, line 43 through col. 7, line 35 and col. 8, lines 6-12).

As to claims 3, 6, and 11, Aslam *et al.* further discloses that the method includes controlling a standby temperature of the heated roll during a standby period between completing a first print job and before commencement of a second print job, said step of controlling the standby temperature including reheating the heated roll to the standby temperature during the standby period, the standby temperature of the heated roll being higher than the first maximum target temperature (as disclosed in col. 4, lines 60-67; see also: Fig. 3).

As to claims 8 and 20, Aslam *et al.* additionally teaches that the preheated temperature and the standby temperature are substantially the same (as illustrated in Fig. 3).

As to claims 10 and 12, Aslam *et al.* discloses that the preheated temperature is at least about 5°C greater than the first maximum target temperature (as illustrated in Fig. 3).

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslam *et al.* (U.S. Patent No. 6,016,410) in view of Cho (U.S. Pub. No. 2004/0042810 A1).

Regarding claim 13, Cho discloses a temperature control method for a fuser 100 having a temperature range for proper fusing and a maximum target temperature within the range, said method comprising steps of:

providing a heated roll 110, a heater 170 and a temperature sensor 162,

determining completion of a first print job processed in the fuser (as disclosed in par. [0048]),

sensing a temperature of the heated roll during a standby period between the completion of the first print job and commencement of a second print job (as disclosed in par. [0047]), and

activating the heater during the standby period to elevate the temperature of the heated roll to a standby temperature within the temperature range (as disclosed in pars. [0047]-[0052]).

Cho differs from the claimed invention because it does not disclose that the standby temperature is greater than the maximum target temperature. Aslam *et al.* discloses the invention as set forth above. Aslam *et al.* further specifies that the standby temperature is greater than the maximum target temperature (as illustrated in Fig. 3). Aslam *et al.* is evidence that one of ordinary skill in the art of temperature control methods for fusers in image forming apparatuses would have recognized that the standby temperature should be made to be greater than the maximum target temperature in order to overcome the temperature droop at the start of a reproduction run, as per teachings of Aslam *et al.* (as disclosed in col. 2, lines 7-10). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Cho to specify that the standby temperature be greater than the maximum target temperature for the benefit described above.

As to claim 14, Aslam *et al.* further teaches that the standby temperature is at least about 5°C greater than the maximum target temperature (as illustrated in Fig. 3).

#### ***Allowable Subject Matter***

Claims 4-5, 7, 9, 15-18, and 21-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show a temperature control method for a fuser in an electrophotographic



Art Unit: 2852

printing apparatus including the step of delaying heating of the heated roll during the standby period for a delay period following completion of the first print job in combination with the other limitations in the claim.

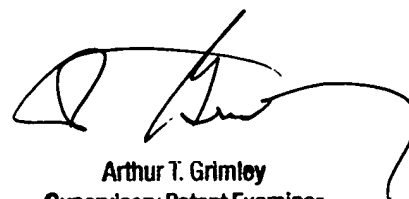
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal L. Wagner whose telephone number is 571-272-8555. The examiner can normally be reached on Mon. - Fri. (7:30am - 4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur T. Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CW



Arthur T. Grimley  
Supervisory Patent Examiner  
Technology Center 2800